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EXAMINER	
LAM, ANN Y	

ART UNIT	PAPER NUMBER
1641	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/576,342	DELATTRE ET AL.	
	Examiner	Art Unit	
	ANN Y. LAM	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 March 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 April 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-10, 12-17, 19-21, 25, 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brennan 5,474,796, in view of Salafsky, 20020094528.

As to claim 1, Brennan discloses that an important characteristic of masked surfaces in patterned oligonucleotide synthesis is that the surface must be poorly wet by common organic solvents such as acetonitrile and the glycol ethers, relative to the more polar fuctionalized binding sites. See column 4, lines 43-50.

It is disclosed that the wetting phenomenon is a measure of the surface tension or attractive forces between molecules at a solid-liquid interface, and is defined in dynes/cm.sup.2. Fluorocarbons have very low surface tension because of the unique polarity (electronegativity) of the carbon-flourine bond. When fluorocarbons are covalently attached to an underlying derivatized solid (highly crosslinked polymeric) support, the density of reactive sites will generally be lower than Langmuir-Blodgett and group density. However, the use of perfluoroalkyl masking agents preserves a

relatively high fluorine content in the solvent accessible region of the supporting surface. See column 4, line 5 to col. 5, line 10.

It is further disclosed by Brennan that the optical properties of glass (polytetrasiloxane) are unsurpassed for detection purposes. There are numerous techniques developed by the semiconductor industry using thick films (1-5 microns) of photoresists to generate masked patterns of exposed glass surfaces. The best method to derivatize the first exposed glass surface is with volatile fluoroalkyl silanes using gas phase diffusion to create closely packed lipophobic monolayers. The polymerized photoresist provides an effectively impermeable barrier to the gaseous fluoroalkyl silane during the time period of derivatization of the exposed region. Following lipophobic derivatization however, the remaining photoresist can be readily removed by dissolution in warm organic solvents to expose a second surface of raw glass, while leaving the first applied silane layer intact. This second region glass can then be derivatized by either solution or gas phase methods with a second, polar silane which contains either a hydroxyl or amino group suitable for anchoring solid phase oligonucleotide synthesis. See column 5, lines 11-30.

Figure 3 depicts the deposition of the reactant solution on a functionalized binding site and subsequent reaction with the surface. A micro-droplet of solution (FIG. 3(a)) is deposited on the functionalized binding site (center cross-hatched region in FIG. 3(b)). Because of the differences in wetting properties of the reactant solution on the functionalized binding site and the surrounding surface, the micro-droplet of the

reactant solution beads on the functionalized binding site and the reactants in solution react with the surface (FIG. 3(c)). (col. 6, lines 8-17)

In an exemplary embodiment, Brennan discloses that a hybridization array is synthesized on a glass plate. The plate is first coated with the stable fluorosiloxane. A CO.sub.2 laser is used to ablate off regions of the fluorosiloxane and expose the underlying silicon dioxide glass. The plate is then coated with glycidyloxypropyl trimethoxysilane, which reacts only on the exposed regions of the glass to form a glycidyl epoxide. The plate is next treated with hexaethyleneglycol and sulfuric acid to convert the glycidyl epoxide into a hydroxyalkyl group, which acts as a linker arm. The hydroxyalkyl group resembles the 5'-hydroxide of nucleotides and provides a stable anchor on which to initiate solid phase synthesis. See column 7, lines 19-40.

Brennan further disclose that the hydroxyalkylsiloxane surface in the dots has a surface tension of approximately .gamma.=47, whereas the fluoroxysilane has a surface tension of .gamma.=18. For oligonucleotide assembly, the solvents of choice are acetonitrile, which has a surface tension of .gamma.=29, and diethylglycol dimethyl ether. The hydroxyalkylsiloxane surface is thus completely wet by acetonitrile, while the fluorosiloxane masked surface between the dots is very poorly wet by acetonitrile. Droplets of oligonucleotide synthesis reagents in acetonitrile are applied to the dot surfaces and tend to bead up, as shown in FIG. 3. Mixing between adjacent dots is prevented by the very hydrophobic barrier of the mask. The plate effectively acts as an array microliter dish, wherein the individual wells are defined by surface tension rather than gravity. See column 7 lines 45-67.

With respect to claim 1, the patterned hydroxylalkylsiloxane that is completely wet by acetonitrile is equivalent to Applicant's uptake areas suitable for taking up a drop of the liquid of interest (acetonitrile with oligonucleotides). The patterned fluorocarbon that is poorly wet by acetonitrile is equivalent to Applicant's claimed non-wetting surfaces. Any portion of the substrate with hydroxylalkylsiloxane and fluorocarbon is equivalent to the claimed active surface.

As to Applicant's recitation of the limitations "the said means for introducing and for extracting the liquid of interest in the box being arranged such that when the liquid of interest is introduced into the box, it covers the said uptake areas", it is noted that the introduction of the liquid is not required to be simultaneous,and thus it encompass introduction of a liquid sequentially such that it covers the uptake areas, spot by spot, and such is disclosed by Brennan in depositing the oligonucleotides in each spot. However, such delivery of oligonucleotides in spots does not appear to require extraction of excess oligonucleotides.

However, providing different probes, the same probes, or some combination thereof, on a substrate is well known in the art, as disclosed by Salafsky in paragraph 0039. The benefits of providing such types of arrays are well understood in the art, such as performing multiple reactions on a single substrate, e.g., reacting the same types of probes with different samples or reagents. The skilled artisan would have recognized that providing the same types of probes on an array can be accomplished by introducing the probes simultaneously, by any means such as by flooding the

substrate with the oligonucleotides for immobilization, and removing (extracting) the excess probes.

As to providing the surface with a box enclosing the active surface of the substrate, it is well within the skills of the ordinary artisan to recognize the basic concept of using such a box, or well structure, to contain sample or reagents during introduction of the materials. This is also taught by Salafsky in paragraph 0039, which discloses that the array substrate can be composed of glass, silicon, or indium tin oxide or any other substrate known in the art, and the surface array can contain physical barriers between elements so that the elements and their biomolecules can remain in isolation from each other during a chemical reaction step (paragraph 0039), thus teaching the benefit of providing such physical barriers in a substrate such as the Brennan substrate. The skilled artisan would have recognized that the physical barriers can isolate reagents or samples. Given the teachings of Brennan and Salafsky, the skilled artisan would have recognized that the Brennan substrate can be modified such that the substrate has physical barriers within which are patterned fluorocarbon and hydroxylalkylsiloxane for providing oligonucleotide spots, as taught by Brennan, such that the physical barriers isolate different reagents or different samples that are subsequently applied in performing the reactions.

Regarding claims 2 and 3, as mentioned above, any portion of the substrate with hydroxylalkylsiloxane and fluorocarbon is equivalent to the claimed active surface. Applicant recites in claim 2 that each uptake area is arranged with at least one working area formed on the active surface. As to claim 2, the area or any sub-area formed on

the hydroxylsiloxane is equivalent to the claimed working area. As to claim 3, an area formed on the hydroxylsiloxane and fluorocarbon is equivalent to the claimed working area formed on the active surface such that the working area is in contact with the captive drop of liquid of interest.

Also, as to claim 3, it is noted that in the modification of the Brennan method as discussed above regarding claim 1, providing the oligonucleotide can be by flooding the substrate, i.e., the delivery of oligonucleotide need not be by spotting the oligonucleotides on each site. Such flooding of the substrate would cause contacting of the nonwetting areas with the oligonucleotides.

As to claim 4, the uptake area (with hydroxylsiloxane) has a ring shape (see e.g., figure 6) it includes, encircles, a working area (a sub-area within the hydoxylsiloxane..

As to claim 5, the area for uptake of the oligonucleotides is considered to encircle several working areas (i.e., sub-areas of the hydroxylsiloxane), as several portions of the uptake area is considered to be the claimed several working areas.

As to claim 6, the working area is an area for detection of a chemical species (oligonucleotides).

As to claims 7-9, the working area, i.e., where the oligonucleotides are immobilized, is an area functionalized with a biological probe, i.e., the oligonucleotides.

As to claim 10, the working area, [i.e., area functionalized with hydroxyalkylsiloxane, and where the oligonucleotides are eventually immobilized], is an area of chemical interaction with the captive drop [oligonucleotie/acetonitrile].

As to claims 12 and 13, the working area is chemical sensor since it comprises oligonucleotides, i.e., chemical actuators, capable of hybridization for detection of complementary oligonucleotides.

As to claim 14, the areas for uptake is a physical uptake area since it physically uptakes the oligonucleotides.

As to claims 15 and 20-21, Brennan does not disclose that the uptake area takes up the drop of liquid of interest via capillary forces. However, Brennan does disclose that mixing between adjacent dots is prevented by the very hydrophobic barrier of the mask. The plate effectively acts as an array microliter dish, wherein the individual wells are defined by surface tension rather than gravity. See column 7 lines 45-67. Thus, providing a physical barrier such that there is capillary forces to also hold the drop of liquid of interest is well within the skills of the ordinary artisan as this is the prior art method of retaining the liquid of interest in a particular desired area.

As to claim 16, the uptake area locally takes up the drop of liquid of interest by wetting (see figure 3 and the discussion above regarding claim 1.)

As to claim 17, the wettability of the hydroxyalkylsiloxane for the acetonitrile/oligonucleotide is greater than the fluorosiloxane [active surface].

As to claim 19, the uptake area takes up the drop of liquid of interest via interactions of hydrophilic/hydrophobic type with the liquid of interest [i.e., via wetting].

As to claims 25 and 26, lab-on-chips or biochips are well known in the art as a means to provide a diagnostic assay, and it is predictable that a glass substrate as

disclosed by Brennan can be used as a lab-on-chip. Also, the glass substrate with the array of biological materials can itself be considered a lab-on-chip or biochip.

As to claim 28, use of the array on glass substrate for optical detection is disclosed (col. 5, lines 1-10.)

Claims 1, 11, 27, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krihak et al., 5,810,989, in view of Brennan 5,474,796, and Salafsky, 20020094528.

Krihak et al. teach fabrication of synthetic DNA or portion probe arrays, and more particularly, to electrochemical deposition of oligonucleotide sequences to form addressed DNA or protein matrices (column 1, lines 7-12.)

Krihak et al. teach that a method of photoelectro-synthesizing probe arrays including the steps of providing a photoconductive layer of material having a layer of electrically conductive material on a first surface. A solution of a plurality of a first oligonucleotide modified monomer is positioned in electrical contact with a second surface of the photoconductive layer opposed to the first surface and a potential is connected between the solution and the layer of electrically conductive material. A beam of light is directed through a portion of the photoconductive layer of material to complete an electrical circuit between the layer of electrically conductive material and the solution through the portion of the photoconductive layer, whereby the monomers

in the solution are electropolymerized on a surface area which is coupled into the electrical circuit by the beam of light. Column 1, line 59 to column 2, line 9.

Thus, Krihak et al. teach electropolymerization of oligonucleotide modified pyrrole in an array pattern on support structure. Column 3, lines 24-26.

However, Krihak et al. do not teach an active surface with surfaces being non-wetting with respect to the liquid of interest with the exception of several localized uptake areas, nor performing introduction of the liquid of interest in a box, and extracting the liquid of interest via extraction means.

However, these limitations are taught by Brennan and Salafsky, as discussed further below.

Brennan discloses that an important characteristic of masked surfaces in patterned oligonucleotide synthesis is that the surface must be poorly wet by common organic solvents such as acetonitrile and the glycol ethers, relative to the more polar fuctionalized binding sites. See column 4, lines 43-50.

It is disclosed that the wetting phenomenon is a measure of the surface tension or attractive forces between molecules at a solid-liquid interface, and is defined in dynes/cm.sup.2. Fluorocarbons have very low surface tension because of the unique polarity (electronegativity) of the carbon-flourine bond. When fluorocarbons are covalently attached to an underlying derivatized solid (highly crosslinked polymeric) support, the density of reactive sites will generally be lower than Langmuir-Blodgett and group density. However, the use of perfluoroalkyl masking agents preserves a

relatively high fluorine content in the solvent accessible region of the supporting surface. See column 4, line 5 to col. 5, line 10.

Figure 3 depicts the deposition of the reactant solution on a functionalized binding site and subsequent reaction with the surface. A micro-droplet of solution (FIG. 3(a)) is deposited on the functionalized binding site (center cross-hatched region in FIG. 3(b)). Because of the differences in wetting properties of the reactant solution on the functionalized binding site and the surrounding surface, the micro-droplet of the reactant solution beads on the functionalized binding site and the reactants in solution react with the surface (FIG. 3(c)). (col. 6, lines 8-17)

With respect to claim 1, the patterned areas (e.g., hydroxylalkylsiloxane) suitable for taking up a drop of the liquid of interest (acetonitrile with oligonucleotides) is equivalent to Applicant's uptake areas.The patterned fluorocarbon that is poorly wet by acetonitrile is equivalent to Applicant's claimed non-wetting surfaces. Any portion of the substrate with hydroxylalkylsiloxane and fluorocarbon is equivalent to the claimed active surface.

As to Applicant's recitation of the limitations "the said means for introducing and for extracting the liquid of interest in the box being arranged such that when the liquid of interest is introduced into the box, it covers the said uptake areas", it is noted that the introduction of the liquid is not required to be simultaneous,and thus it encompass introduction of a liquid sequentially such that it covers the uptake areas, spot by spot, and such is disclosed by Brennan in depositing the oligonucleotides in each spot.

However, such delivery of oligonucleotides in spots does not appear to require extraction of excess oligonucleotides.

However, providing different probes, the same probes, or some combination thereof, on a substrate is well known in the art, as disclosed by Salafsky in paragraph 0039. The benefits of providing such types of arrays are well understood in the art, such as performing multiple reactions on a single substrate, e.g., reacting the same types of probes with different samples or reagents. The skilled artisan would have recognized that providing the same types of probes on an array can be accomplished by introducing the probes simultaneously, by any means such as by flooding the substrate with the oligonucleotides for immobilization, and removing (extracting) the excess probes.

As to providing the surface with a box enclosing the active surface of the substrate, it is well within the skills of the ordinary artisan to recognize the basic concept of using such a box, or well structure, to contain sample or reagents during introduction of the materials. This is also taught by Salafsky in paragraph 0039, which discloses that the array substrate can be composed of glass, silicon, or indium tin oxide or any other substrate known in the art, and the surface array can contain physical barriers between elements so that the elements and their biomolecules can remain in isolation from each other during a chemical reaction step (paragraph 0039), thus teaching the benefit of providing such physical barriers in a substrate such as the Brennan substrate. The skilled artisan would have recognized that the physical barriers can isolate reagents or samples. Given the teachings of Brennan and Salafsky, the

skilled artisan would have recognized that the Brennan substrate can be modified such that the substrate has physical barriers within which are patterned fluorocarbon and hydroxylalkylsiloxane for providing oligonucleotide spots, as taught by Brennan, such that the physical barriers isolate different reagents or different samples that are subsequently applied in performing the reactions.

It would have been obvious to the skilled artisan to provide a hydrophobic barrier between oligonucleotides in the Krihak et al. substrate, as taught by Brennan to separate the individual oligonucletide sites, and to provide a physical barrier in the Krihak et al. substrate as taught by Salafsky for the benefit of isolating different reagents or different samples, as may be desirable in performing an analysis. The skilled artisan would have had a reasonable expectation of success since the skilled artisan would have had the chemistry knowledge to provide a hydrophobic material on the Krihak et al. substrate. As to the physical barrier, Salafsky teach that it may be formed on a substrate of any various material and thus the skilled artisan would have reasonably expected that a physical barrier can be provided on the Krihak et al. substrate.

As to claims 11 and 27, the working area is considered an electrochemical microcell since it allows electrochemical interaction and is a small area.

As to claim 29, it is well recognized by the skilled artisan that an array of probes allows for simultaneous (parallel) detection.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krihak et al., 5,810,989, in view of Brennan 5,474,796, and Salafsky, 20020094528, and further in view of Pamula et al., 6,911,132.

Krihak et al., and Brennan and Salafsksy have been discussed above. However, none of those references teaches that the uptake area takes up the drop of liquid by electrowetting. However electrowetting to manipulation a drop of liquid is known in the art, as disclosed by Pamula et al. (see abstract). The skilled artisan would have recognized that the Krihak et al. substrate for electrochemical deposition of oligonucleotide can also be used for electrowetting to take up the drop of oligonucleotide, based on the same techniques of electrowetting disclosed for example by Pamula et al. for drop manipulation.

Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brennan 5,474,796, in view of Salafsky, 20020094528, as applied to claim 1 above, and further in view of Schremp et al. 7008788.

Brennan and Salafsky have been discussed above. However, neither of these references teach extracting the liquid by means for removing it by suction (as recited by claim 22), or by injecting a gaseous fluid into the box to expel the liquid of interest for the box.

However, such means of removal of liquid is well known in the art, and is also shown by Schremp et al.

It is disclosed by Schremp et al., that buffer solution may be introduced by means of, for example, manual pipette, syringe and needle, delivery and aspiration nozzles of a dispensing apparatus, and the like. The diluted sample solution can be removed from the device by the means involved in its introduction. For example, the solution may be removed by means of a manual syringe and needle, an aspiration nozzle, manual pipette, pump or vacuum action and so forth. Following rinsing, a buffer solution may be left in the chamber of the device in order to maintain the inner surface of the support comprising the molecular array in a hydrated state. The larger volume chamber of the present device greatly facilitates sample solution removal and rinsing of the support and the smaller volume of the well permits the use of relatively small quantities of sample solution to contact the surface of the support. In addition, the ability to place the wash fluid or other fluids in the larger chamber permits washing of the surface of the support in the device itself. The design of the present devices, providing an open top, allows easy access into the larger chamber for introduction and removal of fluids. Inlets and outlets in the form of nozzles and the like may be introduced with relative ease into the large chamber of the device. Column 15, lines 1-23.

Schremp et al. also disclose use of air knife, in which a force sufficient to provide effective removal of liquids from the surface of a support is applied to the surface of the supports. Column 15, lines 24-45.

Thus use of a syringe or pump or vacuum action or a gaseous fluid to remove or expel a solution or excess solution would have been obvious to the skilled artisan, as such means are well known in the art for such purposes, and are exemplified by Schremp et al.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brennan 5,474,796, in view of Salafsky, 20020094528, and Schremp et al. 7008788, as applied to claim 23 above, and further in view of Buechler, 5,458,852.

Brennan and Salafsky and Schremp et al. have been discussed above. While Schremp et al. teach use of an air knife to remove liquids from a surface (i.e., gaseous fluid to expel liquid), Schremp et al. do not teach that the gaseous fluid is saturated with vapour of the liquid of interest.

However, use of the same material to wash a surface is known in the art, as disclosed by Buechler (col. 17, lines 14-21). Thus combining the teachings of Schremp et al. and Buechler, the skilled artisan would have recognized that the gaseous fluid or vapour can be the vapour of liquid of interest, i.e., the same material as that deposited, since such material would also accomplish the same task of removing excess fluid from the surface of the substrate.

Response to Arguments

Applicant's arguments have been fully considered. Applicant argues that Brennan fails to teach or suggest "introduction of the liquid of interest into a box via an introduction means, the box enclosing the active surface…the means for introducing and for extracting the liquid of interest in the box being arranged such that when the liquid of interests is introduced into the box, the liquid of interest covers the uptake areas." Applicnat notes that the deliver of nucleotides is directed to individual spots, and each spot is covered by a different agent.

As clarified above in the grounds for rejection, it is noted that the introduction of the liquid is not required to be simultaneous, and thus it encompass introduction of a liquid sequentially such that it covers the uptake areas, spot by spot, and such is disclosed by Brennan in depositing the oligonucleotides in each spot. However, such delivery of oligonucleotides in spots does not appear to require extraction of excess oligonucleotides. However, providing different probes, the same probes, or some combination thereof, on a substrate is well known in the art, as disclosed by Salafsky in paragraph 0039. The benefits of providing such types of arrays are well understood in the art, such as performing multiple reactions on a single substrate, e.g., reacting the same types of probes with different samples or reagents. The skilled artisan would have recognized that providing the same types of probes on an array can be accomplished by introducing the probes simultaneously to the array for immobilization and removing (extracting) the excess probes.

As to claim 2, Applicant argues that Brennan is silent with respect to the working area. Applicant also argues that Brennan does not teach the limitations recited in claim 3.

As clarified above in the grounds for rejection, any portion of the substrate with hydroxylalkylsiloxane and fluorocarbon is equivalent to the claimed active surface. Applicant recites in claim 2 that each uptake area is arranged with at least one working area formed on the active surface. Thus, the area formed on the hydroxylsiloxane and fluorocarbon is equivalent to the claimed working area formed on the active surface such that the working area is in contact with the captive drop of liquid of interest. Also, as to claim 3, it is noted that in the modification of the Brennan method as discussed above regarding claim 1, providing the oligonucleotide can be by flooding the substrate, i.e., the delivery of oligonucleotide need not be by spotting the oligonucleotides on each site. Such flooding of the substrate would cause contacting of the nonwetting areas with the oligonucleotides.

It is noted that claim 30 was previously indicated as allowable. However, upon further search and consideration, the rejection of claim 30 as indicated above was found to be appropriate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANN Y. LAM whose telephone number is (571)272-0822. The examiner can normally be reached on Mon.-Thurs. 9-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Shibuya can be reached on 571-272-0806. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ann Y. Lam/
Primary Examiner, Art Unit 1641